



April 5, 2013

NRC 2013-0033
10 CFR 50.73

Regional Administrator, Region III
U. S. Nuclear Regulatory Commission
2443 Warrenville Road, Suite 210
Lisle, IL 60532-4352

Point Beach Nuclear Plant, Units 1
Dockets 50-266
Renewed License Nos. DPR-24

Licensee Event Report 266/2013-001-00
Loss of Offsite Power to Unit 1 Safeguard Buses

Enclosed is Licensee Event Report (LER) 266/2013-001-00 for Point Beach Nuclear Plant (PBNP), Unit 1. Pursuant to 10 CFR 50.73(a)(2)(vi)(A), the event is reportable as an event or condition that resulted in manual or automatic actuation of the emergency diesel generators.

This submittal contains no new or revised regulatory commitments.

If you have questions or require additional information, please contact Mr. Michael Millen at 920/755-7845.

Very truly yours,

NextEra Energy Point Beach, LLC

A handwritten signature in black ink, appearing to read "Larry Meyer".

Larry Meyer
Site Vice President

Enclosure

cc: Administrator, Region III, USNRC
Project Manager, Point Beach Nuclear Plant, USNRC
Resident Inspector, Point Beach Nuclear Plant, USNRC
PSCW

NRC FORM 366 (10-2010)		U.S. NUCLEAR REGULATORY COMMISSION		APPROVED BY OMB: NO. 3150-0104 EXPIRES: 10/31/2013	
LICENSEE EVENT REPORT (LER)					
1. FACILITY NAME Point Beach Nuclear Plant Unit 1				2. DOCKET NUMBER 05000266	
3. PAGE 1 of 3					
4. TITLE Loss of Offsite Power to Unit 1 Safeguards Buses					
5. EVENT DATE		6. LER NUMBER		7. REPORT DATE	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.
02	06	2013	2013	- 001	- 00
04	05	2013			
8. OTHER FACILITIES INVOLVED					
FACILITY NAME			DOCKET NUMBER		
NA			NA		
FACILITY NAME			DOCKET NUMBER		
NA			NA		
9. OPERATING MODE MODE 1		11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§: <i>(Check all that apply)</i>			
<input type="checkbox"/> 20.2201(b) <input type="checkbox"/> 20.2201(d) <input type="checkbox"/> 20.2203(a)(1) <input type="checkbox"/> 20.2203(a)(2)(i) <input type="checkbox"/> 20.2203(a)(2)(ii) <input type="checkbox"/> 20.2203(a)(2)(iii) <input type="checkbox"/> 20.2203(a)(2)(iv) <input type="checkbox"/> 20.2203(a)(2)(v) <input type="checkbox"/> 20.2203(a)(2)(vi)		<input type="checkbox"/> 20.2203(a)(3)(i) <input type="checkbox"/> 20.2203(a)(3)(ii) <input type="checkbox"/> 20.2203(a)(4) <input type="checkbox"/> 50.36(c)(1)(i)(A) <input type="checkbox"/> 50.36(c)(1)(ii)(A) <input type="checkbox"/> 50.36(c)(2) <input type="checkbox"/> 50.46(a)(3)(ii) <input type="checkbox"/> 50.73(a)(2)(i)(A) <input type="checkbox"/> 50.73(a)(2)(i)(B)			
10. POWER LEVEL 100%		<input type="checkbox"/> 50.73(a)(2)(i)(C) <input type="checkbox"/> 50.73(a)(2)(ii)(A) <input type="checkbox"/> 50.73(a)(2)(ii)(B) <input type="checkbox"/> 50.73(a)(2)(iii) <input checked="" type="checkbox"/> 50.73(a)(2)(iv)(A) <input type="checkbox"/> 50.73(a)(2)(v)(A) <input type="checkbox"/> 50.73(a)(2)(v)(B) <input type="checkbox"/> 50.73(a)(2)(v)(C) <input type="checkbox"/> 50.73(a)(2)(v)(D)			
		<input type="checkbox"/> 50.73(a)(2)(vii) <input type="checkbox"/> 50.73(a)(2)(viii)(A) <input type="checkbox"/> 50.73(a)(2)(viii)(B) <input type="checkbox"/> 50.73(a)(2)(ix)(A) <input type="checkbox"/> 50.73(a)(2)(x) <input type="checkbox"/> 73.71(a)(4) <input type="checkbox"/> 73.71(a)(5) <input type="checkbox"/> OTHER Specify in Abstract below or in NRC Form 366A			
12. LICENSEE CONTACT FOR THIS LER					
NAME				TELEPHONE NUMBER (Include Area Code)	
Kim Locke, Engineering Analyst				920/755-7655	
13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT					
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	
X	FK	BKR	S005	YES	
14. SUPPLEMENTAL REPORT EXPECTED					
<input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE)				<input checked="" type="checkbox"/> NO	
				MONTH	DAY
				YEAR	
15. EXPECTED SUBMISSION DATE					
ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)					
<p>On February 6, 2013 at 1132 CST, an undervoltage condition occurred on Unit 1, 1A-05 and 1A-06 safety-related buses, which was caused by a loss of 1X-03 high voltage station auxiliary transformer (HVSAT). The four emergency diesel generators (EDGs) started. The G01 and G03 EDGs loaded onto buses 1A-05 and 1A-06. Unit 2 maintained offsite power throughout the event.</p> <p>Unexpected operation of the 1F89-112 circuit switcher resulted in de-energization of the 1X-03 transformer causing a low voltage condition, which started the standby EDGs. The opening of the circuit switcher did not cause a lockout of 1X-03. As a result, the automatic transfer to the redundant offsite power supply in the switchyard was not initiated, and G01 and G03 EDGs automatically loaded onto Unit 1 safety-related buses 1A-05 and 1A-06, once they had reached operating voltage and frequency.</p> <p>This event is being reported pursuant to 10 CFR 50.73(a)(2)(iv)(A), any event or condition that resulted in a manual or automatic actuation of any of the systems listed in 10 CFR 50.73(a)(2)(iv)(B), including any event or condition that results in the actuation of the emergency AC electrical power system.</p>					

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CONTINUATION SHEET**

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NARRATIVE**Description of the Event:**

On February 6, 2013 at 1132 CST, all three phases of the Unit 1, 1X-03 High Voltage Station Auxiliary Transformer High Side Circuit Switcher, 1F89-112, opened for an unknown reason. An undervoltage condition occurred on 4.16 kV safeguard buses 1A-05 and 1A-06. This resulted in the starting of all four emergency diesel generators (EDGs) and the automatic loading of EDGs G01 and G03 onto buses 1A-05 and 1A-06, respectively.

The 2X-03 high voltage station auxiliary transformer remained energized throughout the event. An Unusual Event (UE) was declared at 1143 CST based upon the interruption of offsite power to the essential buses. The UE was subsequently terminated at 1340 CST on February 6, 2013, when offsite power was restored to H-02 bus from H-01 bus and to the affected Unit 1 buses from the 2X-03 transformer. Unit 2 maintained offsite power throughout the event.

The undervoltage condition resulted in a separation of the vital buses from off-site power, as designed. The EDGs performed as expected, fast starting and loading onto safeguards buses 1A-05 and 1A-06, respectively. The plant safety systems functioned as expected.

After assessing the cause of the loss of offsite power and confirming that the redundant circuit for offsite power remained available, offsite power was restored to the Unit 1 safeguards buses by synchronizing the running EDGs to the grid and closing the alternate feed from offsite power. Offsite power remained available to the affected unit (Unit 1) via this redundant path (2X-03).

The loss of offsite power did not constitute a safety system functional failure. Both Unit 1 and Unit 2 remained on-line throughout the event.

Cause of the Event:

The specific cause of this event was the opening of all three phases of the 1F89-112, high side circuit switcher, to the 1X-03 high voltage station auxiliary transformer. This resulted in the degraded voltage condition to safeguards buses 1A-05 and 1A-06. The one-out-of-one open logic for 1F89-112 circuit switcher was satisfied due to spurious contact actuation. The root cause was found to be the original design of the control logic circuitry lacked robustness to mitigate the spurious actuations.

Analysis of the Event

The 345 kV system supplies the high voltage station auxiliary transformers (1/2-X03), which provide the interface to the 13.8 kV system and are the normal offsite power supply for auxiliary loads associated with plant engineered safeguards. Under some conditions, if the normal offsite supply is not available, safeguards equipment can also be supplied from offsite power by back feeding through the main transformer.

The 13.8 kV system boundaries include the high voltage station auxiliary transformer (1/2X-03) to the high side connection of the low voltage station auxiliary transformers (1/2X-04), and various 480 V transformers.

The 13.8 kV system supplies offsite power to the station via the 4.16 kV and 480 V systems. The 13.8 kV system is divided into three buses which are designated H-01, H-02 and H-03. The H-02 bus supplies Unit 1 and is normally supplied by high voltage station auxiliary transformer 1X-03. The H-02 bus supplies power to

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low voltage station auxiliary transformer 1X-04. Similarly, the H-03 bus supplies Unit 2 and is normally supplied by high voltage station auxiliary transformer 2X-03. The H-03 bus supplies power to the low voltage station auxiliary transformer 2X-04. The units can be interconnected to alternate supplies by arranging bus tie breakers to connect H-02 to H-01 and H-03 to H-01.

Safety Analysis

The spurious action of the circuit switcher resulted in a low voltage condition on the 1A-05 and 1A-06, safety-related buses, which started the four EDGs. However, the opening of the circuit switcher did not cause a lockout of 1X-03. This was in accordance with the design of the lockout sensor. An undervoltage alone does not cause a transformer lockout. As a result, the automatic transfer to close in the redundant offsite power supply in the switchyard was not initiated, and the G01 and G03 EDGs proceeded to automatically load to the Unit 1 safety system buses, once they had reached operating voltage and frequency.

An assessment confirmed that the redundant circuit for offsite power remained available. Offsite power was restored to the Unit 1 safeguards buses by synchronizing the running EDGs to the grid and closing the alternate feed from offsite power. Offsite power remained available to the affected unit from this redundant path.

Corrective Actions

The corrective action to prevent the recurrence is to modify circuit switchers 1F89-112 and 2F89-152 control logic circuitry to remove the spurious actuation. The actions have been entered into the corrective action program.

Similar Events

LER 266/2011-001-00, Loss of Offsite Power to Unit 1 Safeguards Buses

Component Failure Data

<u>Manufacturer</u>	<u>Description</u>	<u>Model Number</u>
S & C	Circuit Switcher	Type G, 3 Gap, Center-Break